

Re: Eotvos.

Source: <http://sci.tech-archive.net/Archive/sci.physics.relativity/2005-11/msg01812.html>

- *From:* "Androcles" <Androcles@xxxxxxxxxxx>
 - *Date:* Mon, 28 Nov 2005 10:05:23 GMT
-

"em" <nootlanoo@dodiggerdo> wrote in message
[news:438a9f10\\$0\\$9288\\$afc38c87@xxxxxxxxxxxxxxxxxxxxxxxxxxxx](mailto:news:438a9f10$0$9288$afc38c87@xxxxxxxxxxxxxxxxxxxxxxxxxxxx)
>
> "Androcles" <Androcles@xxxxxxxxxxx> wrote in message
> [news:x9hif.92376\\$Es4.14590@xxxxxxxxxxxxxxxxxxxxxxxxxxxx](mailto:news:x9hif.92376$Es4.14590@xxxxxxxxxxxxxxxxxxxxxxxxxxxx)
>>
>> "em" <nootlanoo@dodiggerdo> wrote in message
>> [news:438996b6\\$0\\$17706\\$afc38c87@xxxxxxxxxxxxxxxxxxxxxxxxxxxx](mailto:news:438996b6$0$17706$afc38c87@xxxxxxxxxxxxxxxxxxxxxxxxxxxx)
>>>>>>> "A gyroscope in
>>>>>>> orbit will not change the orientation of its axis to
>>>>>>> prove that space is curved. It will remain fixed
>>>>>>> at what ever it is pointed at."
>>>>
>>>>> It will if its orbit is non-circular. As Mercury's orbit is
>>>>> non-circular.
>>>>>
>>>>> We are talking about a satellite orbiting the earth.
>>>>>
>>>>> You can have non-circular orbits around Earth.
>>>>
>>>> So you can.
>>>>
>>>>
>>>> I really don't know why you bothered pointing that out.
>>>>
>>>>
>>>>
>>>>> If a gyroscope remains fixed in a circular orbit but undergoes
>>>>> precession in an elliptic orbit, then I should imagine it would be fair
>>>>> to say it is not actually the curvature of space which is actually
>>>>> causing the precession.
>>>>>
>>>>>
>>>>>
>>>>>> As with the precession of Mercury, this must be caused by some quality
>>>>>> present in the elliptic orbit which is not present in a circular orbit.
>>>>>>
>>>>>>

Re: Eotvos.

>>>>
>>> For starters we can say the velocity is not constant in an elliptic
>>> orbit: As a particle in an elliptic orbit spends half its time speeding
>>> up and the other half of its time slowing down.
>>>
>>>
>>>
>>> I should also imagine it would be fair to say that the curvature in an
>>> elliptic orbit is not constant.
>>>
>>>
>>>
>>> Where as the curvature in a circular orbit remains constant throughout.
>>>
>>>
>>>
>>> In consideration I think the variation in the curvature of its path
>>> might have more to do with causing the precession.
>>
>> Examine the longitude of perihelion in this Newtonian simulation,
>> which adequately explains the advance of perihelion of Mercury in
>> the Sol /Jupiter system.
>> <http://www.ifmo.ru/butikov/Projects/Collection1.html> (example 2)
>> The "green" orbit of our sun is 2 solar diameters.
>> Example 10 is quite a good model of Shoemaker–Levy, which crashed
>> in 1994, breaking up as it came within the Roche limit.
>> <http://www.seds.org/sl9/sl9.html>
>> http://en.wikipedia.org/wiki/Roche_limit
>
> Cool and fun to watch, but I do not know how accurate it is in regards
> three body orbits.

It's a simulation designed for educational purposes by Professor of Physics Eugene Butikov.

<http://www.ifmo.ru/butikov/index.html>

You are not required to know how accurate it is, you are supposed to understand a principle. For example, the principle of addition is to combine two quantities into one quantity, as in $2+2 = 4$.

So two apples plus two apples equals four apples. When you have understood the principle, you can add 12 apples to 48 apples and get 60 apples.

You cannot make two apples plus two oranges equal four apples, even if Einstein says you can.

Generally speaking, idiots can recite their times tables and alphabet, but do not understand the principles involved in such difficult computations as addition, subtraction, multiplication and division.

> Take for example the three body system Sun Earth and Moon.
>
> I do not see the moon speeding up and slowing down as it orbits the earth.

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No? Have look at this, then.

<http://antwrp.gsfc.nasa.gov/apod/ap051113.html>

And this (give it moment to load):

<http://www.jimloy.com/cindy/kepleria.htm>

Now it does take a month for the moon to go around once, so you'll need to be both patient and VERY accurate to see it speeding up and slowing down, but it does. Really.

To see the moon move, look at the stars behind it.

- > That is, when the moon is travelling in the same direction as the earth it
- > has to increase its velocity in order to over take the earth. Then the
- > opposite applies when the moon is passing back across the other side. The
- > moon then has to reduce its velocity in order to retain a constant
- > relative velocity to the earth.

Correct. It's velocity changes with respect to the sun.

<http://www.nmm.ac.uk/upload/img/lunar-eclipse.gif>

<http://www.science-projects.com/Astro/OrbitsEMSplanes.GIF>

- > Such accelerations are not possible with what is regarded as a near
- > circular orbit.

The Moon's orbit isn't as nearly circular as you seem to think. It's an ellipse,

which is why it seems to get further away and then closer in

<http://antwrp.gsfc.nasa.gov/apod/ap051113.html>

- > When we look at the moon from the ground the motion of the moon across our
- > sky exhibits a constant velocity as if the earth were stationary.

That's because the Earth is turning. Press (through your eyelid) a finger against your eyeball and gently push your eyeball to one side. The world moves. To measure the motion of the moon you have to compare to the stars beyond. You'll need an accurate protractor and a notebook, it takes a month to go around once.

- > Also with examples 1. and 2. the relative distance between the earth and
- > the moon is not constant.

Correct, the distance between Earth and Moon is not constant.

<http://antwrp.gsfc.nasa.gov/apod/ap051113.html>

You'll need a lot of geometry knowledge to do the calculations accurately, though.

This is an analemma.

<http://antwrp.gsfc.nasa.gov/apod/ap050713.html>

- > Like I said. The most inextricable thing about the moon's orbit around the
- > earth is that it is consistent with an earth that is stationary.

You have a lot to learn, son. Please don't try to run before you can walk. You are far from ready to discuss the orbit of Mercury.

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I suggest you start here. This is REAL science.

<http://webexhibits.org/calendars/year-text-Galileo.html>

Come back if you have any questions.

Androcles

• *Follow-Ups:*

◆ **Re: Eotvos.**

◇ *From:* em

• *References:*

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◇ *From:* N:dlzc D:aol T:com \((dlzc\)

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• Prev by Date: **Re: Einstien, the father of this group How about me being fatherhere**

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